P300

User's Manual

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1 Introduction

1.1 What is the PIXORD Network Camera?

PIXORD Network Camera (NC) is an Internet-based digital surveillance system with a built-in Web server. It runs on TCP/IP to distribute the compressed live video into Intranet/Internet through the Ethernet connection.

You can easily manipulate and configure the PIXORD NC with the Web-based control over the Internet via standard browsers such as Internet Explorer

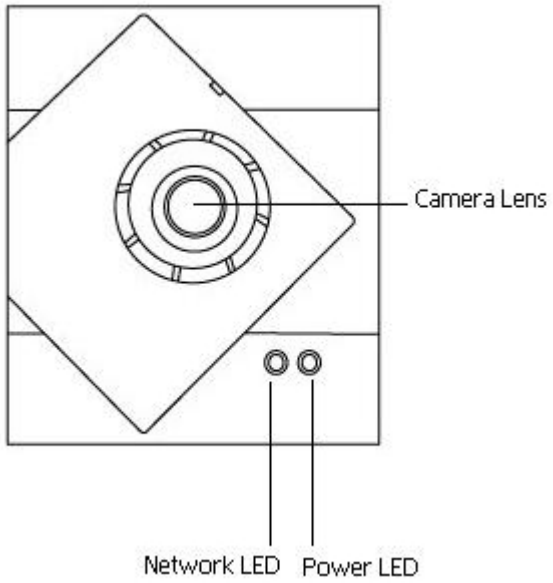
The PIXORD NC contains an image compression chipset, capable of delivering standard JPEG, MJPEG, and real-time video, in order to distribute monitored images into the limited network bandwidth

1.1.1 Advanced Features

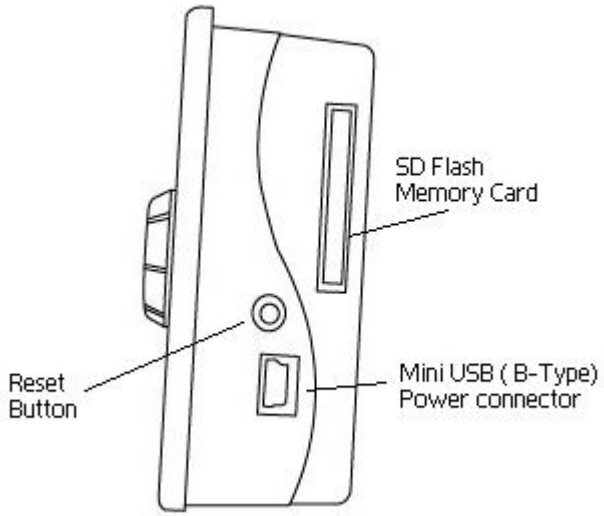
- **Self-Contained HTTP Web Server, providing Internet capability**
- **IP assignment via Pixord IP Installer Software**
- **Active-X control for Internet Explorer providing maximum performance**
- **Customized Event Triggering by Motion Detection**
- **Email / FTP / SD Card Storage**
- **DynDNS DDNS support for dynamic IP application**
- **3-Layer User Security Control**
- **Upgradeable firmware**
- **Server operating control through CGI base script allowing easy integration**
- **Providing live streaming integrated voice**

2 Physical Characteristics

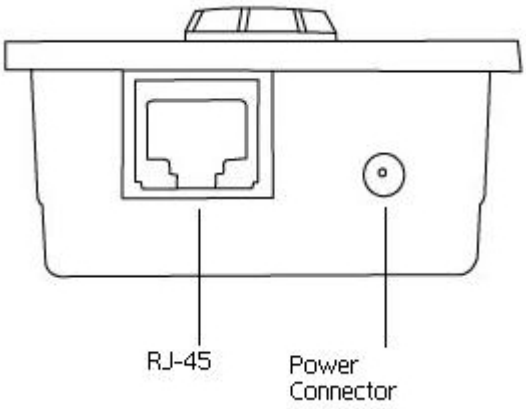
- **Front Panel**



- **Side Panel**



➢ **Bottom Panel**



3 Installation

3.1 System Requirements

1.Windows 2000 SP4/Windows XP/Windows 98se/Windows ME

Internet Explorer 6.0 . DirectX 9.0c

2. Ensure that your system has installed the latest Critical Updates from Windows Update

3. Ensure that your Internet Explorer Security settings have been set to Low (temporarily) or at least enable ActiveX control settings.

4. If your system is using Symantec Internet Security Professional, ensure that it is disabled.

5. Temporarily disable any Anti-Virus software that may be installed.

6. Ensure that your system has installed the soundboard and VGA drivers.

- **Is it necessary to reboot the PC after upgrading the ActiveX control?**

  If you have been browsing a device that is using an old ActiveX control then switch to a device with a new ActiveX control in the same browser session, after installing the new ActiveX control you will be prompted to reboot your computer before the changes will take effect. In fact, you only need to close all instances of Internet Explorer, then open a new instance and browse to the device with the new ActiveX control. This time, after installing the ActiveX control, you will not be prompted to reboot your computer.

3.2 Network Camera Installation

Ensure the PIXORD Network Camera is in power-off state.

Ethernet cable: Connect PIXORD NC to your network using twisted pair (CAT5) terminated with a standard RJ-45 connector.

If it is connected to a hub/switch, use a pass-through cable. If it is connected directly to a PC, use crossover cable.

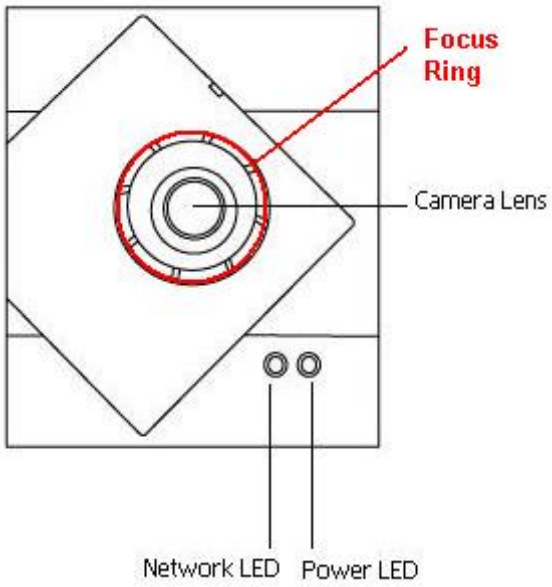
Ensure you power supply adapter specification (Input AC 110V or 220V, Output DC5V DC 2.5A) matches to your power line, and connect the power supply to the Network Video Server.Check the power LED (Green and Orange) is constant lit, and the Network LED (display link status) should light up (Red) less than 10 seconds if your network connection is correct.

3.3 Network Camera Installation Procedure

Mount the PIXORD Network Camera

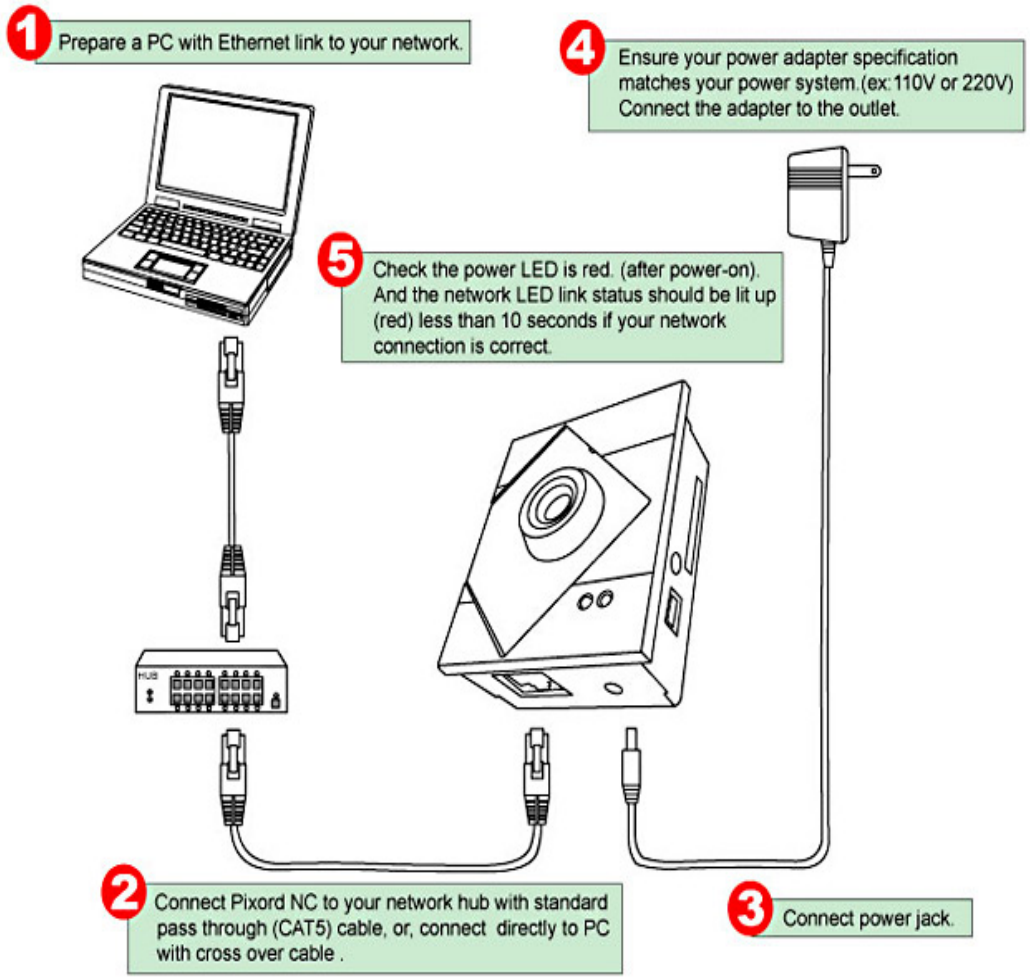
The PIXORD NC provides screw holes on both the top and bottom surfaces of the unit for mounting the stand assembly. You can mount your PIXORD NC on a desktop, a wall, or ceiling by adjusting the linked way of stand assembly.

3.4 Focusing your Camera



Turn it clockwise to adjust the focus of the camera.

4 Connecting the Camera to the Network


1 Prepare a PC with Ethernet link to your network.
4 Ensure your power adapter specification matches your power system.(ex:110V or 220V) Connect the adapter to the outlet.
5 Check the power LED is red. (after power-on). And the network LED link status should be lit up (red) less than 10 seconds if your network connection is correct.
2 Connect Pixord NC to your network hub with standard pass through (CAT5) cable, or, connect directly to PC with cross over cable .
3 Connect power jack.

5 Assign IP using IP Installer

5.1 IP Installer

PIXORD IP Installer is the software that provides an easier way for setting the IP address and network configurations of the PIXORD's Network Camera. Using this tool, you can easily set multiple PIXORD NCs at the same time with the batch setting function. By utilizing IP Installer, the setting process is largely simplified and the setting time is effectively shortened. Moreover, IP installer can not only save all the configurations of PIXORD NC as a backup, but also it can restore the previous configurations of PIXORD NC.

5.1.1 Preparation before IP Assignment:

Always consult your network administrator before assigning an IP address to your server.

Make sure the PIXORD NC is powered on and correctly connected to the network.

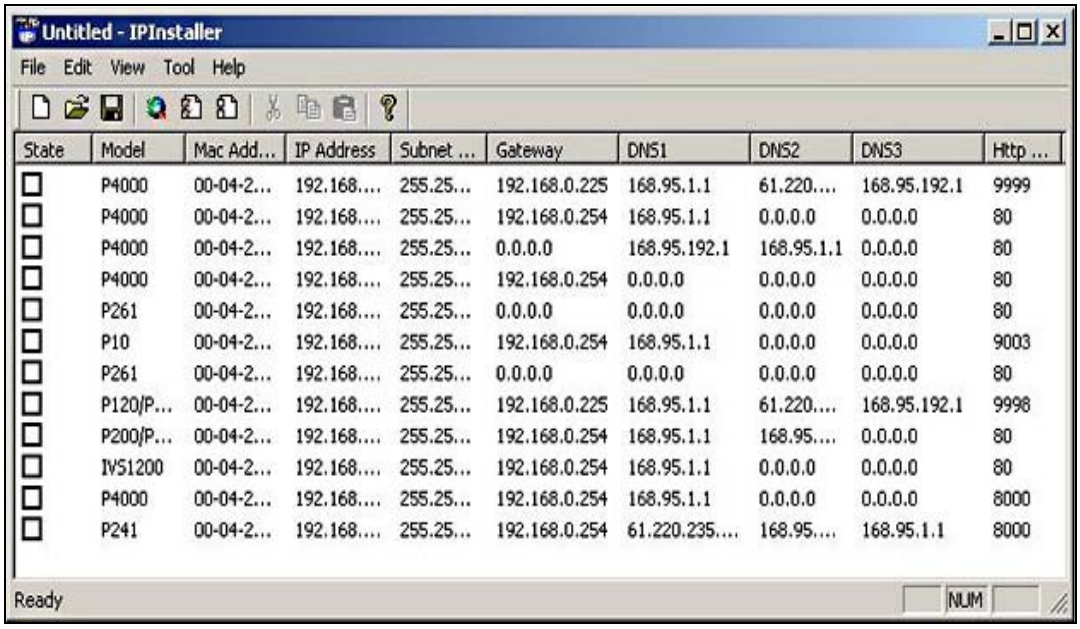
Obtain an IP address not yet used from your network administrator.

MAC Address: Each PIXORD NC has a unique Ethernet address (MAC address) shown on the bottom of the PIXORD NC as the serial number (S/N) with 12 digits (e.g. 000429-XXXXXX) .

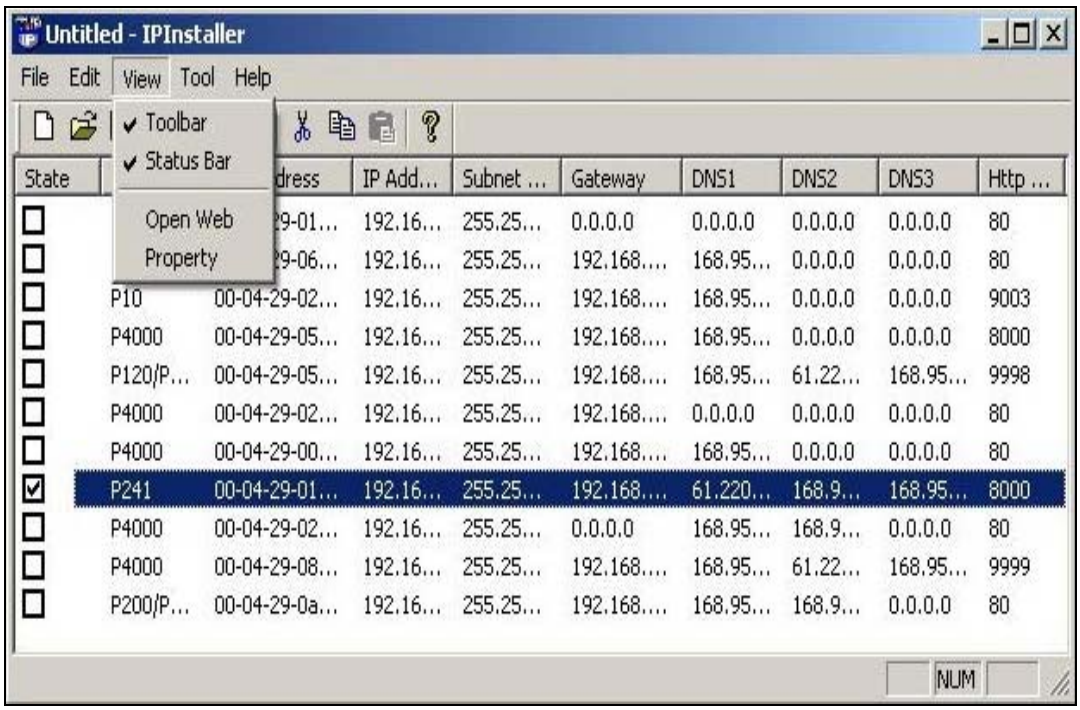
5.2 Executing IP Installer

Double click the mouse left button on the IP Installer icon.

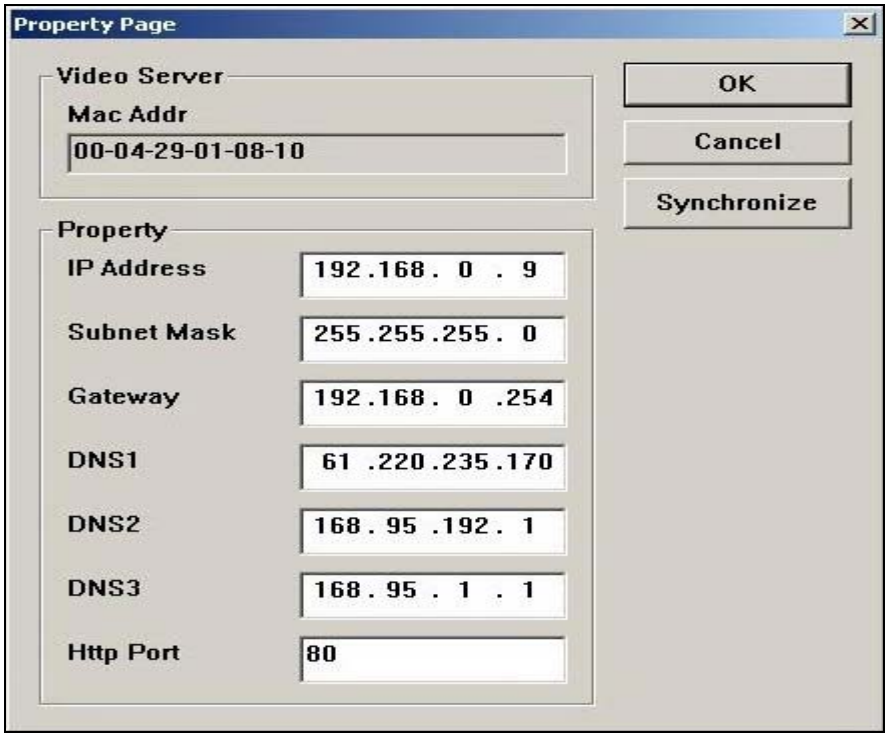
The PIXORD IP Installer form is displayed on the screen.



5.3 Assign an IP Address to PiXORD Network Camera

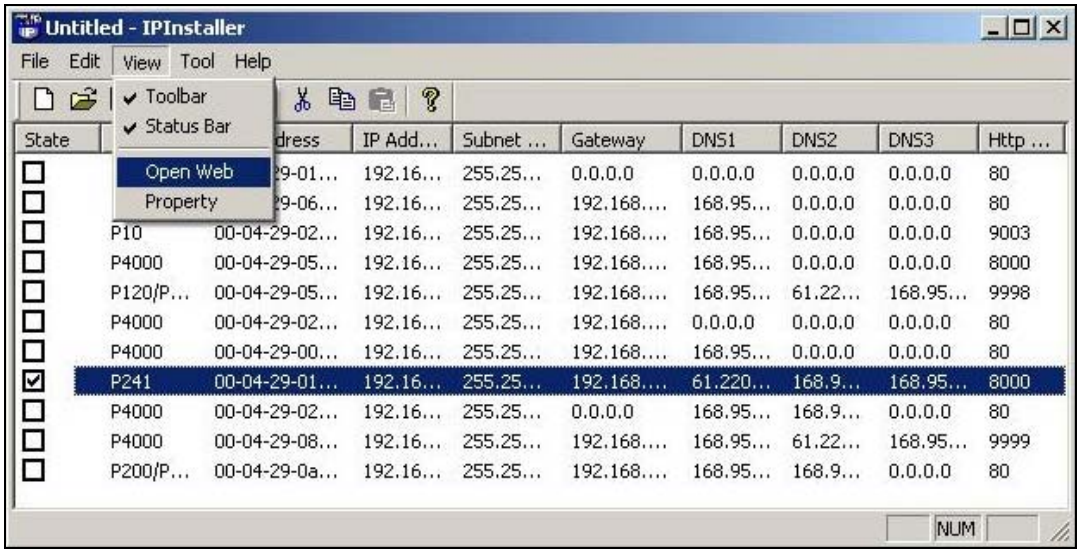


Select the MAC Address of your PIXORD NC in the list. The MAC Address is identical to the unit's S/N (Serial Number). And click the menu bar View/Property to open the Property Page for the selected item. After filling in the properties, click on Synchronize first in order to save the Properties, then click the OK button to submit the settings for the unit and the settings will be activated immediately.



5.4 Verify the IP Address and Open the Home Page

To access the Home Page of the selected unit, run the View/Open Web on the menu bar. If you find your browser is opened and automatically connected to the PIXORD NC Home Page, it means you've assigned an IP Address to the unit successfully. Now you can close the IP Installer and start to use your PIXORD NC.



5.5 Verify and Complete the Installation from Your Browser

Start your browser and enter the IP Address of your PIXORD NC in the Address field

When the Web-based user interface runs for the first time through Internet Explorer, you must temporarily lower your security settings to perform a one-time-only installation of PIXORD's ActiveX component onto your workstation

The procedure is the following:

From the Tools menu, select Internet Options

Click the Security tab and take note of your current security settings

Set the security level to Low and click OK

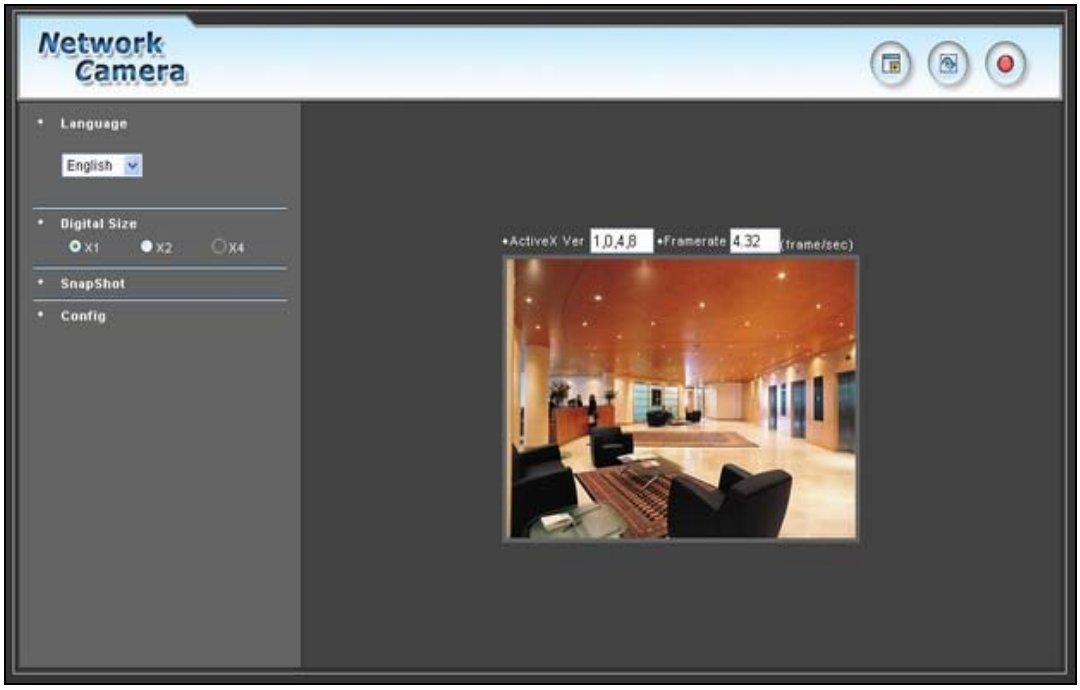
Type the Internet Address or Host Name of your PIXORD NC into the Address field

A windows-dialog asking if you want to install a Pixord ActiveX Control will appear. Click yes to start the installation. Once the ActiveX installation is complete, return the security settings to their original value, as noted above

To continue the configuration of your own application, click the configure button in the top left corner of this window.

6 Browsing Web User Interface

Start your Web browser and enter the URL（e.g.，“http://61.220.235.172”） in the Address field. The Home page of the PIXORD NC is now displayed:



- **1.Select Language:**

  Click on “Select Language” and a list of languages will be displayed. The following languages can be selected: English, Chinese Traditional, Chinese Simplified.

- **2.Digital Size**

  You can select the aspect ratio. Sizes will be based on the video source selection, and they can be the following aspect ratios: X1, X2, and X4.

- **3. Snapshot:**

  Click to take a picture from the viewing video.

- **4.Config:**

  Click on it in order toview Configuration pages of PIXORD NC.

- **5.Maximize to full screen**

- **6.Rotation for 90 degrees. Clockwise direction.**

- **7.Recording:**

  Clicking on this button, it will start to record live video. The file will be saved in a folder named PIXORD in your C Drive.

  The filename will be named under recPSVRecimage_ yyymmdd-hhmmss.avi

  Yyyy – Current Year

  Mm – Current Month

  Dd – Current Date

  Hh – Current Hour

  Mm – Current Minute

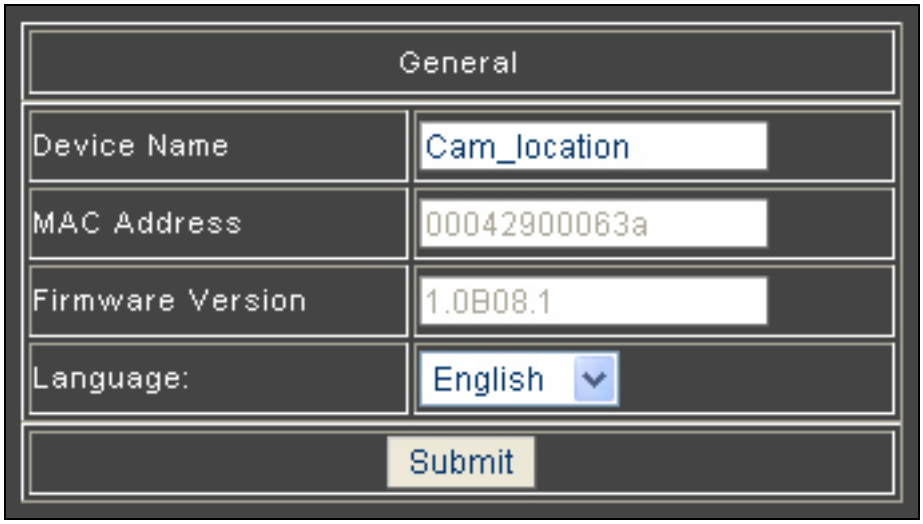
  Ss – Current second

  The file will be saved as an AVI file, which can be displayed with most media players.

7 Configuration Page

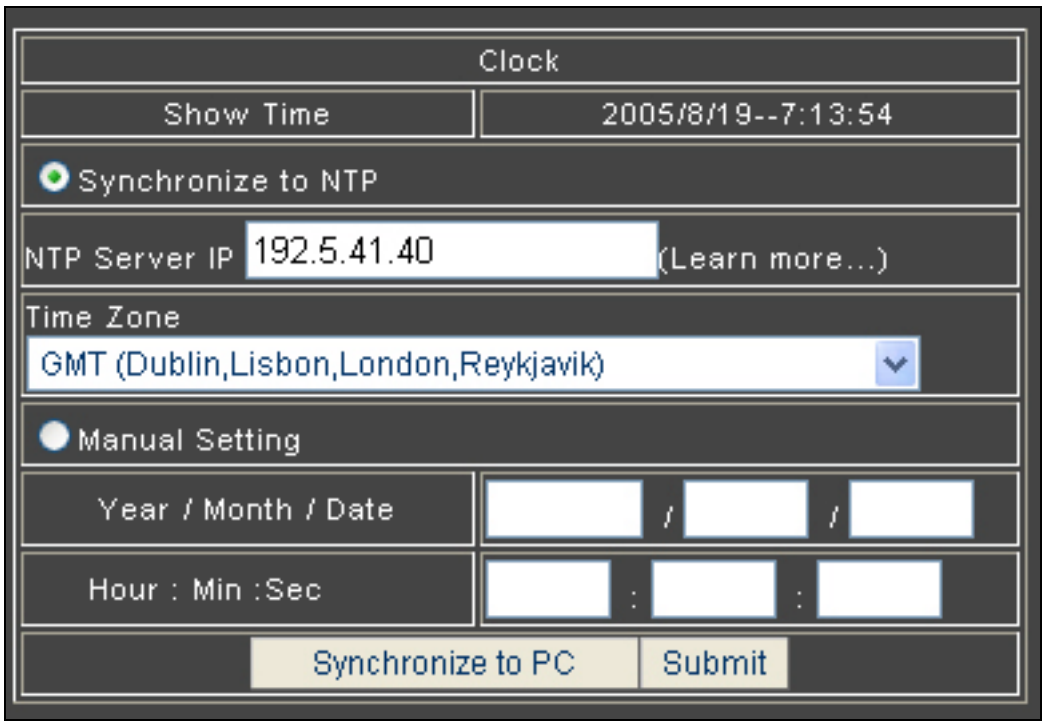
7.1 System

7.1.1 General



- 1.Device name. This name setting also used by PIXORD DDNS service to recognize each server
- 2.Displays the MAC address information for this PIXORD NC. It's read only.
- 3. Displays the firmware version's information
- 4. Alternative language option. The user may change the language of web contents for different applications.

7.1.2 Clock



- **Synchronize with NTP serve**

  Assigns an IP Address of a NTP server to use for time synchronization. A list of NTP servers can be found by clicking on (Learn more….)

  Time Zone: Select your regional time zone

IP or URL	
220.130.158.52	time.stdtime.gov.tw
140.109.1.4	stdtime.sinica.edu.tw
133.100.9.2	clock.nc.fukuoka-u.ac.jp
137.189.8.174	clock.cuhk.edu.hk
204.152.184.72	clock.isc.org
209.81.9.7	clock.via.net
193.79.237.14	ntp1.nl.net
131.188.3.220	ntp0.fau.de

- **Manual Setting**

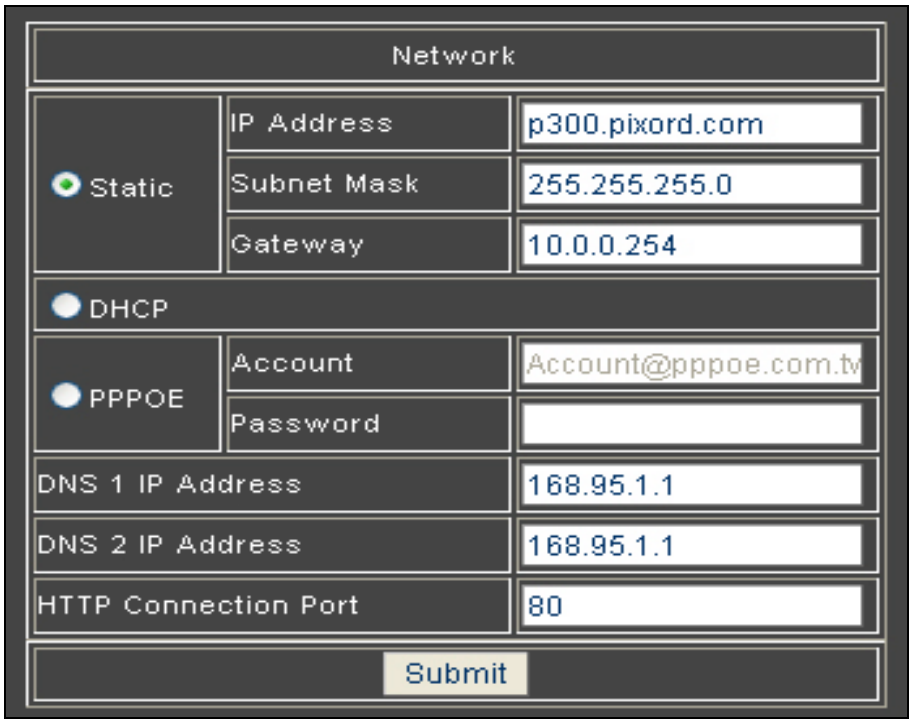
  The time can also be set manually or to be sychronized to PC

  For the manual Setting: enter the Year, Month, Date, Hour, Minute and Senconds

  For synchronizing to the PC, click on Synchronize to PC

  Click on Submit in order to save the changes.

7.1.3 Network



Static – Assign manually the IP Address, Subnet Mask, DNSs Addresses, Gateway and HTTP Connection Port

DHCP - If there is a DHCP server installed on your LAN, you can enable DHCP to automatically obtain network settings such as IP address, Subnet Mask, and Gateway.

Note: When an IP address is assigned to a device using DHCP or PPPoE the device will automatically E-mail a message according to the settings on E-mail configuration page. Don't forget to set the E-mail settings on the E-mail Configuration page.

- **IP Address :**

  PIXORD NC IP address.

- **Subnet Mask :**

  Subnet mask of your LAN. Note that the IP Address above and Gateway IP Address below should be in the same subnet.

- **Gateway IP Address :**

  PIXORD NC traffics to the Internet should go through a Gateway, if this is not set, the NC can only be accessed through the Intranet (LAN)

- **PPPOE:**

  In case your network uses PPPoE to get connected to the Internet, mostly ADSL connections, you can use this feature of connecting the camera straight to the internet. Account: Enter the username for your PPPoE account. Password: Enter

the password for the respective account. Hardware connection: Setup the configuration with your computer in your network first. Once the configurations are done, connect the camera to the ADSL Modem.

- **DNS IP Address :**

  Domain name server information allows PIXORD NC to contact external server with a mnemonic domain name (e.g. ftp.PIXORD.com) instead of numeric IP address (e.g. 168.95.1.1).

- **HTTP Connection Port :**

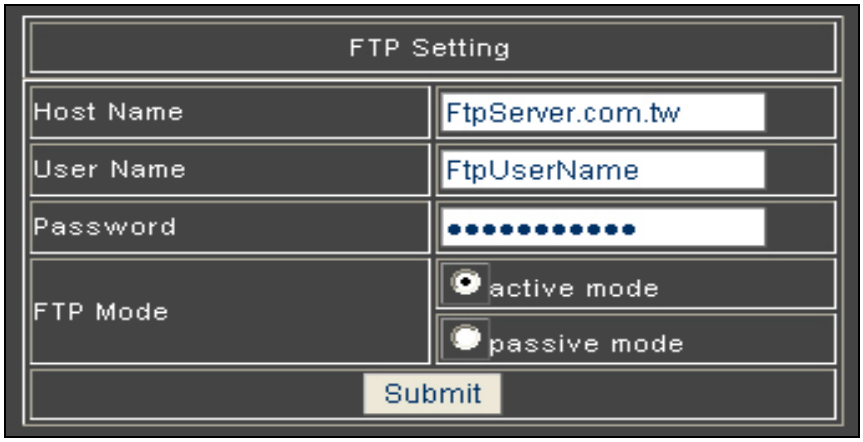
  Specify the HTTP web server listen port for the client (browser) connection. The default uses port 80 (HTTP standard port), and the valid range from 0~65535. Consider that ports from 0 to 1024 are well known ports, if you customize the port, make sure you are setting the correct one.

Click on " Submit " , then PIXORD NC will automatically store the setting and reboot system (within 5 seconds to complete boot sequence) to take the setting effective.

Note: Before changing the listening port, the user must add a port directive ":" in the browser URL in order to get the correct connection. (i.e. http://<IP>:<Port>, e.g. http://192.168.0.200:8000 to access the PIXORD NC with IP 192.168.0.200 and port with 8000).

These features enable user to use PIXORD NC behind NAT or IP Sharing devices which could access up to 65536 PIXORD NC with one IP Address.

7.1.4 FTP Setting



This feature is set for the Event Motion triggering

- **Host Name:**

  Enter the FTP host name or IP address of the FTP server, where the images should be sent upon Motion Detection for the Event Trigger.

- **Username & Password:**

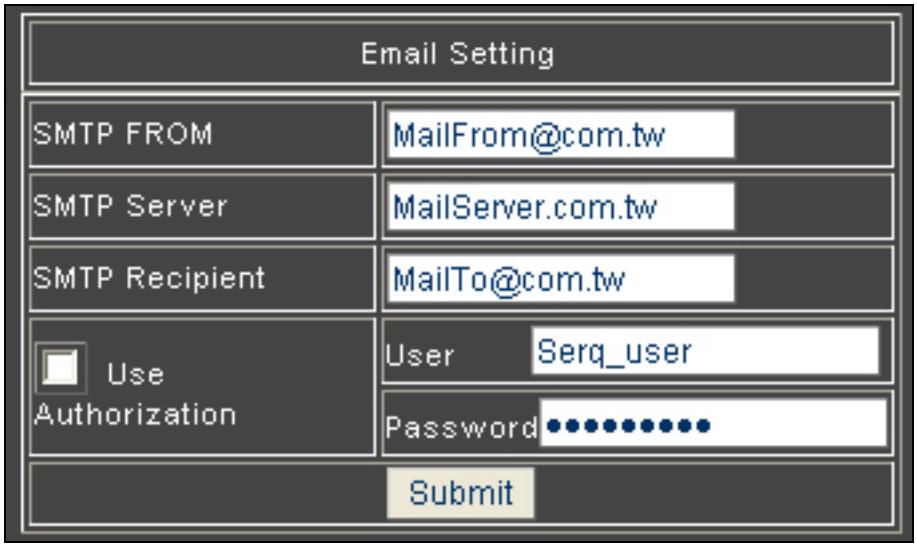
  Enter the respective user's account username and password for the FTP server

- **FTP Mode:**

  Please select the mode in which the images should be sent

  Active FTP is beneficial to the FTP server admin, but detrimental to the client side admin. The FTP server attempts to make connections to random high ports on the client, which would almost certainly be blocked by a firewall on the client side. Passive FTP is beneficial to the client, but detrimental to the FTP server admin. The client will make both connections to the server, but one of them will be to a random high port, which would almost certainly be blocked by a firewall on the server side.

7.1.5 Email



- **SMTP From:**

  Input the email address of the sender

- **SMTP Server:**

  Input the name of the SMTP Server

- **SMTP Recipient:**

  Input the name of the Recipient

- **Use Authentication:**

  In case that the Recipient requires authentication for receiving emails, please make a checkmark and fill the Recipient's Username and Password

7.1.6 Audio/Video Adjust

- **Quality**

  The video quality can be adjusted in a range from 1 to 10. The lower the rate, the lower the quality.

- **Anti-Flicker:**

  Anti-flickerness can be set for 60Hz, 50Hz and Outdoor option.

- **Auto Exposure, Auto White Balance:**

  Select ON or OFF for disabling or enabling these features for the video displayed.

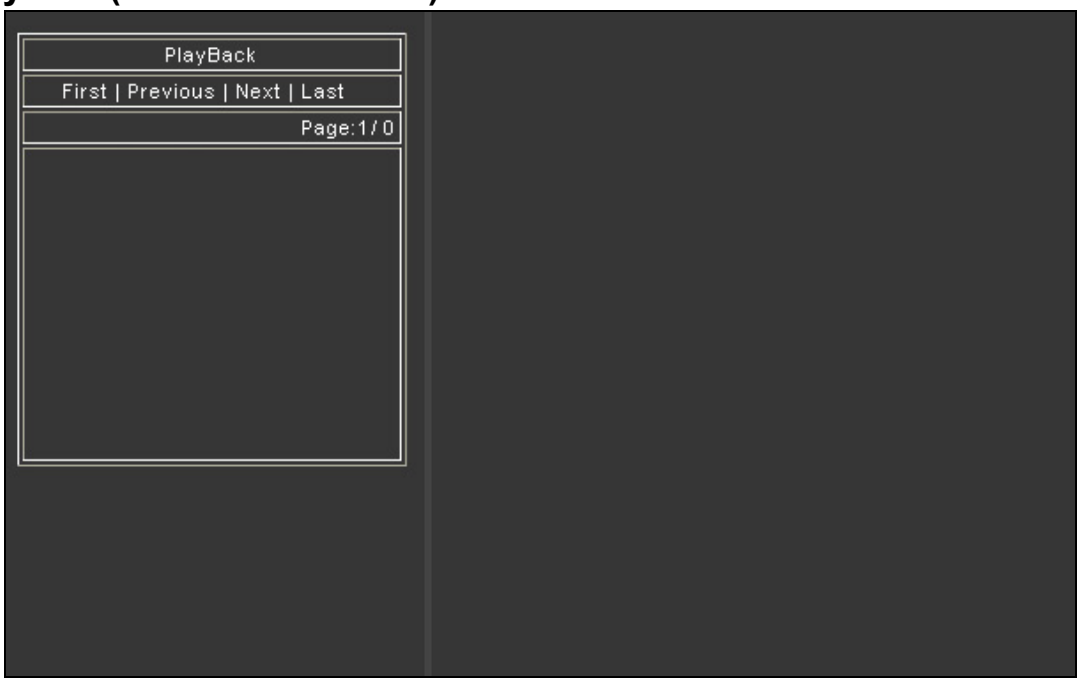
- **Video Source:**

  Select the resolutions to be displayed. Resolutions: Qsif,Sif and VGA

- **Audio Adjust:**

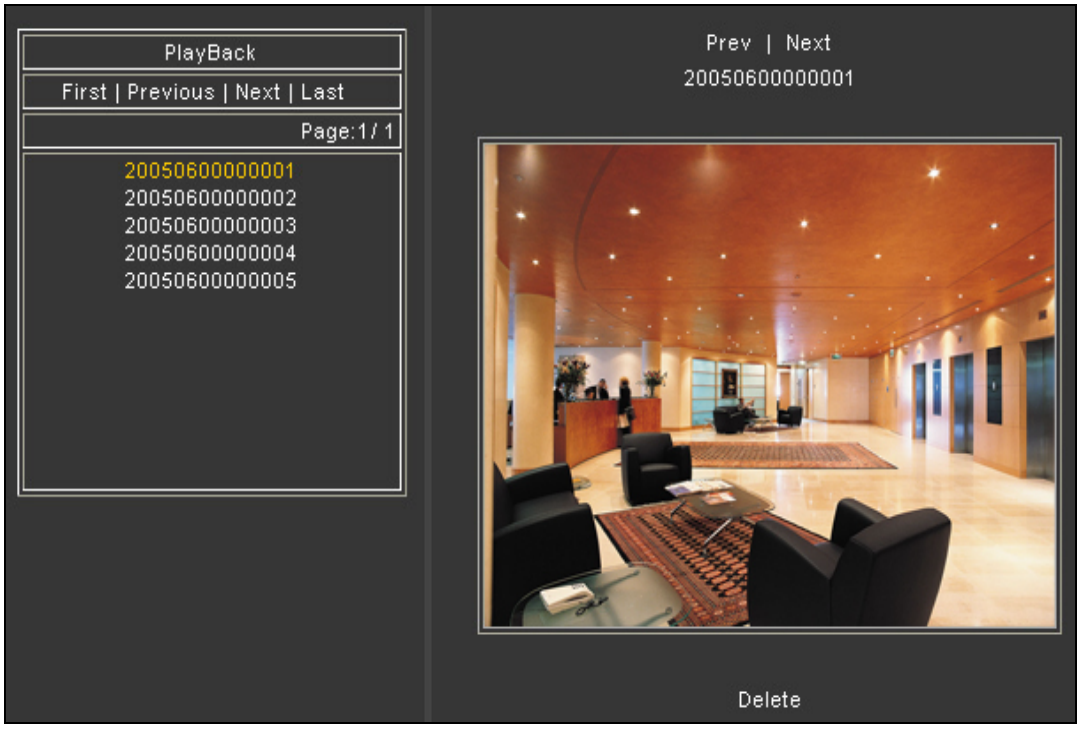
  Select the audio feature to be turned ON or OFF

7.1.7 Palyback(from the SD Card)



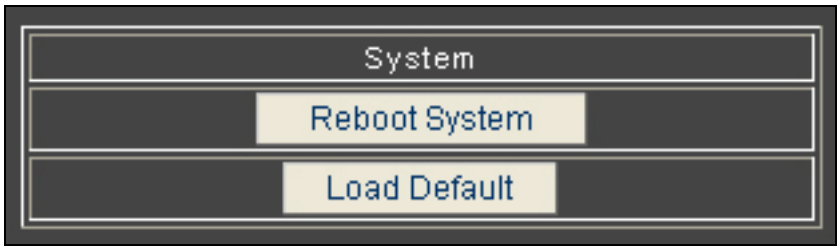
When the Motion Detection is enabled, and the SD Card Storage has be chosen to receive images, the images that have been saved can be retrieved from here

Once the image has been saved, such list will show all the images that have been stored. Click on the image filename and the images will be shown at the right panel



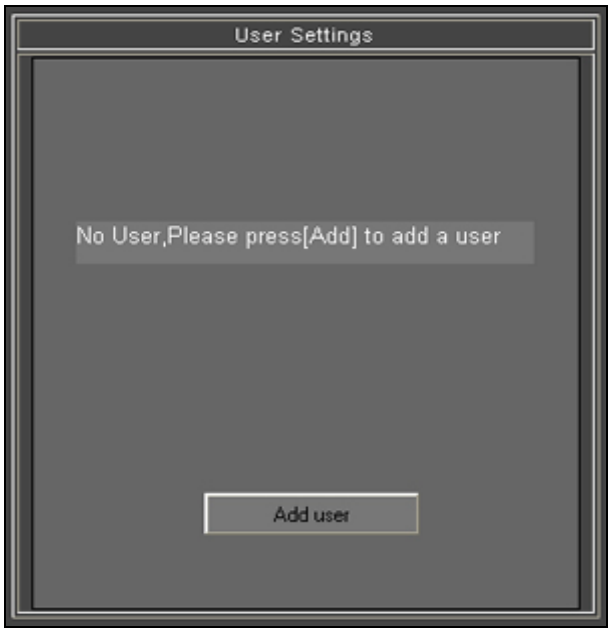
7.2 Advanced Configuration

7.2.1 System



- **1.The Reboot System forces PIXORD NC to restart.**
- **2. The Load Default recovers all factory settings except the network settings. All existing users will be deleted**

7.2.2 User



As for factory default, no user is set.

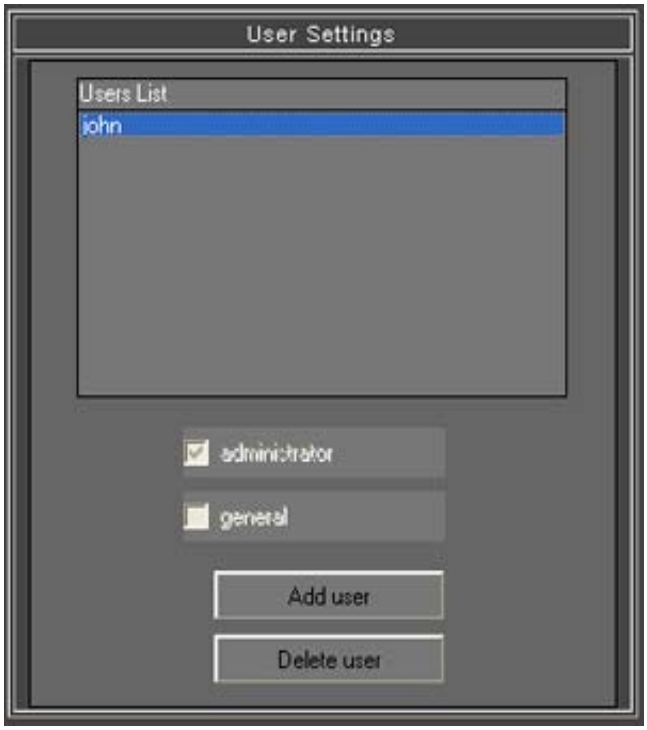
- **1.New user name to login**
- **2.Password for the user**
- **3.Retype the password to confirm it**
- **4."Administrator User" is the user with administration permissions. The user has all permissions to operate the PIXORD NC, such as managing, configuring, and upgrading the software.**
- **5."General User" is the user without administration permissions. The user can be configured to have limited permissions to see video, for example, "capable of changing video size, etc".**
- **6.Adds to the above new user into list.**

  When entering "submit" at the first time, PIXORD NC will ask for a new administrator to login. Once the users are in the list, you can choose the users in the list to be modified or removed.

- **7.Aborts the above operation**

  PIXORD NC provides 3- layer user security control

  "Open for All" is a factory default when no user enters in User Configuration, it allows any user over Internet to monitor and configure the PIXORD NC. Note: that the first user shall set and get administration privilege; otherwise, he can't get into administration page any more. If this happened, the unit must be set back to factory default.



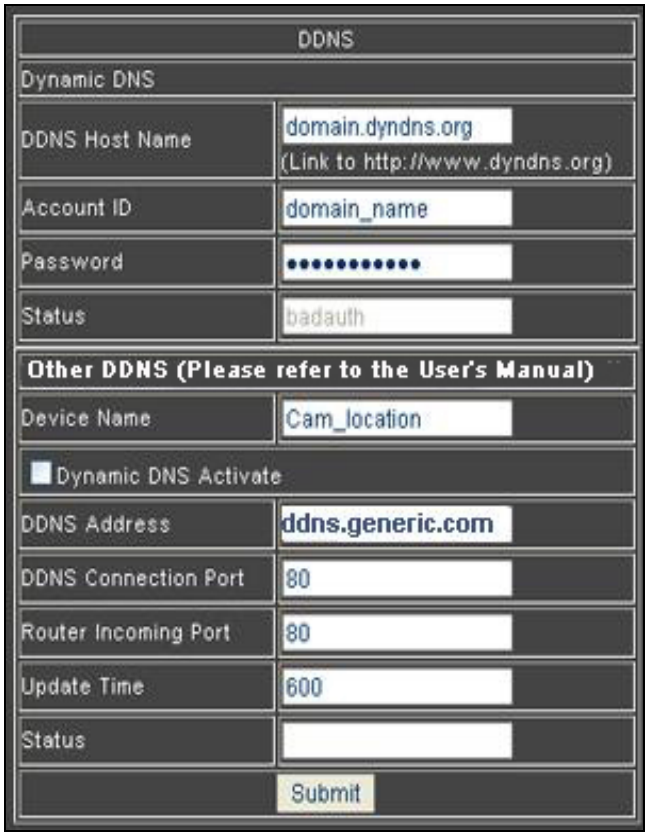
1.Displays a list for the available users

2.Displays the permission for the listed users. Notice that this is read-only.

3.Adds another user to the unit

4.Removes the selected user

7.2.3 DDNS



- **DDNS**

  This service could be useful when the PiXORD NC is located behind Dial-up ADSL or IP sharing devices, which does not have fix IP address, then it's impossible to reach PiXORD NC from Internet.

  The P300 supports two DDNS services: DynDNS and Pixord's DDNS,

  both for free.

  The PiXORD DDNS (Dynamic Domain Name Service) is used when users want to access PiXORD NC with an easy memorized name such as http://pixordNC.pixord.com instead of http://61.220.235.172.

  The mechanism of DDNS service is described as below:

  When PiXORD Nc enables the DDNS service, it will "register" the device to the DDNS server with its information, such as server name to access, router virtual port number and updated frequency, etc.

  Then PiXORD NC automatically "update" to PiXORD DDNS server by a fix frequency, so even IP is changed by ISP, the DDNS server still could get and update internal database.

- **DynDNS**
  - **DDNS Host Name:**

    The device supports the usage of the DDNS feature through DynDns.
  - **Account ID:**

    Enter the username provided by DynDns
  - **Password:**

    Enter the respective password for the account

  Once the device has changed into a new public IP Address, DynDNS server will be notified, and the domain will be updated to the latest public IP Address
- **Other DDNS – Pixord**

  The PiXORD DDNS service is proprietary, which only works with PiXORD DDNS server and PiXORD brands of products.
  - **Device Name:**

    Specify the name that Pixord NC will have in the DDNS database
  - **Dynamic DNS Activate:**

    Click on to activate PiXORD DDNS service.
  - **Dynamic DNS Address:**

    Specify address of PiXORD DDNS server, and the default is "ddns.pixord.com"
  - **Dynamic DNS Port:**

    Specify PiXORD DDNS server listen port, and the default is "80"
  - **Router Incoming Port:**

    Specify your router listen port for PiXORD DDNS server to redirect. The router may configure the different port for incoming (Internet request) and outgoing (Intranet request), e.g. it may configure to redirect Internet HTTP (port 80) request to Intranet port 8000, then, in this case, we must configure the "Router Incoming Port" to 80, and inside the PiXORD NC Network settings should set HTTP port with 8000.
  - **Update Time:**

    Specify the PiXORD NC updated frequency in seconds, and the default is 600 (10 minutes), this is interval that PiXORD NC will automatically send an updated packet to PiXORD DDNS server.
  - **DDNS message:**

Return messages from remote PiXORD DDNS server, and some hints may help to diagnostic the reason if register fails.

- **ddnsaddr CGI fail:**

  It means that PiXORD NC can't communicate with Internet world. Make sure your Network Configuration has correct subnet mask and default gateway, and DNS1 setting is correct and reachable.

- **Already registered:**

  Another user had registered this name; please change the name to be registered in the DDNS server at Device Name.

Click "Submit" to valid the changes made.

Then, once users access from Internet with its register name, e.g. if registering with server name "demo" to DDNS server "ddns.pixord.com", PiXORD NVS could be accessed by http://demo.ddns.pixord.com.

Example: To setup a PiXORD NC (IP address 192.168.0.200) behind a dialup ADSL router, and wish to access by name http://demo.ddns.pixord.com. And, the procedure is as below:

- **Additional Notes:**

  Configure the ADSL router with PPPoE enable; Lan IP, 192.168.0.254; and subnet mask, 255.255.255.0.

  Assign the ADSL router's virtual server with service port 80 to server IP 192.168.0.200

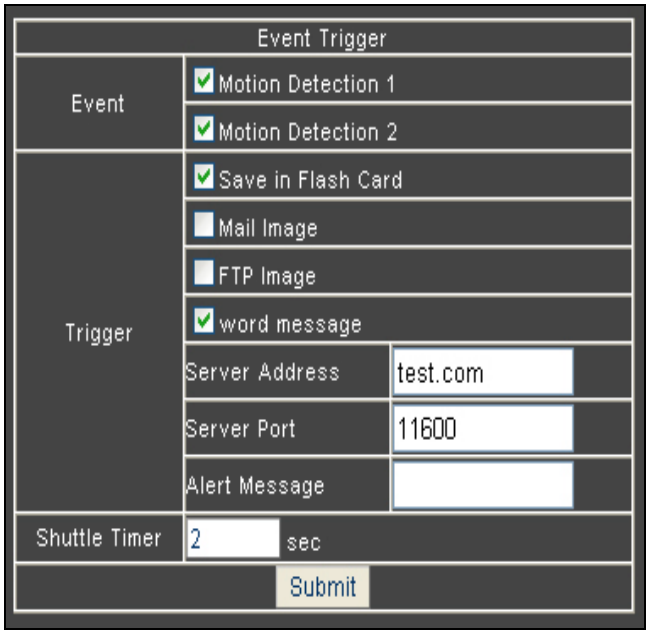
  Configure PiXORD200 network configuration with IP address 192.168.0.200; subnet 255.255.255.0; DNS1 with valid DNS address such as 168.95.192.1 or 168.95.1.1; gateway IP address with 192.168.0.254 (router's IP); HTTP port with port 80.

  Configure server name in chapter 5.1.1 Server General Settings with "demo".

  Configure DDNS with Activate; Address "ddns.pixord.com"; DDNS with port 80; Router Incoming port 80; and update time with 600 (10 minutes). Finally, clicks submit.

  If DDNS message success, then enter URL http://demo.ddns.pixord.com on browser. Consequentially, it will show PiXORD NC's home page.

7.2.4 Event Trigger



- **Event:**

  Two motion areas can be set for the Event Triggering. Once motion is detected with the areas set, images can be sent to the SD Flash Card, E-mail and FTP Server.

- **Trigger:**

  Make a checkmark on either Save in Flash Card, Mail Image, FTP Image, Word Message, or on all of them.

  Save in Flash Card: Make sure that the SD Flash Card is inserted properly into the SD card slot.

- **Mail Image:**

  SMTP configuration must be set. Please refer to System>Email setting to configure the SMTP information. Information of the SMTP server, such as SMTP Domain name or IP Address, Username & Password of the account will be required.

- **FTP Image:**

  The FTP Server configuration must be set. Please refer to System>FTP Setting for setting the information about the FTP Server that will be receiving the images. Information such as the IP or Domain of the FTP Server, Username and Password of the account will be required to fill in.

- **Word Message:**

  Make a checkmark in case you wish to send a text message to a listening server. Server Address: Enter an IP Address or a domain name for the listening server. Server Port: Enter the port in which the text message is being sent to. Alert Message: Enter the text message which will be recognized as such in the listening server.

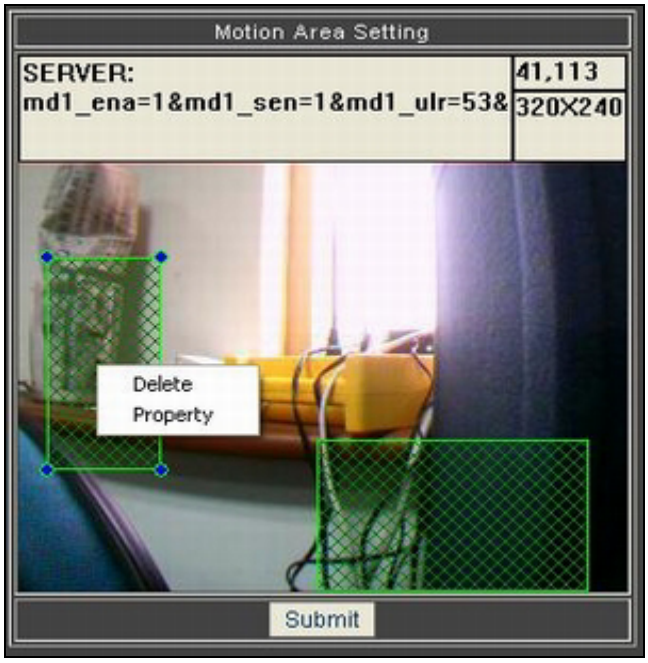
- **Shuttle Timer:**

  Enter a number that defines the interval in which the device will be taking the snapshots. The unit is in seconds.

- **Submit:**

  Click on Submit once the settings are correct.

7.2.5 Setting the Motion Areas



- **Motion areas:**

  2 motions areas can be set by dragging the mouse over the video, and the area will be marked. Once the area is marked, click on Submit to valid the areas.

- **Deleting motion areas:**

  Place the mouse pointer over the area to be deleted, then right click the mouse, and a menu list will show up. Click on Delete in order to remove the area.

7.2.6 Upgrade Firmware

Please click on Browse and a window will pop-up in order to let you locate the firmware file under the name of STDL1024K.bin. Once you have selected the file and clicked on Accept, click on Submit to proceed with the firmware upgrade.

The device will be upgraded with the firmware automatically, and it will reboot by itself.

7.2.7 Recording Setting

- **File Name:**

  Input the name for the file

- **Max File Length:**

  Set the file space that a single will be using. The unit is in MB

- **Total File Space:**

  Set the total file space for the recording. The unit is in MB.

- **Save File Path:**

  Indicate which folder should be the file saved to.

- **Appending Recording:**

  Select whether the recorded file should be appended to the previous recorded file.

- **Cycle Recording:**

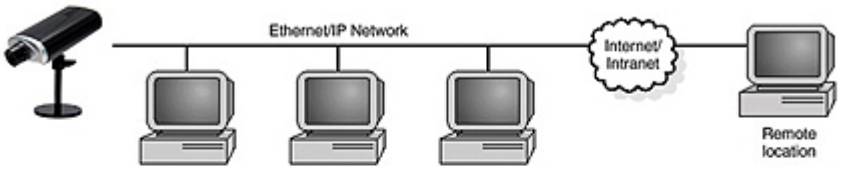
  This feature indicates if the old space should be used or not for the recording.

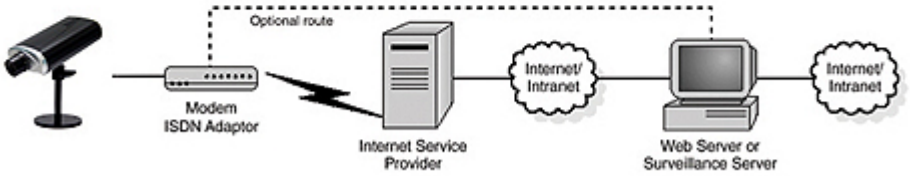
- **Record: Starts recording**

- **Stop: Stops recording**

8 Connecting Your Camera

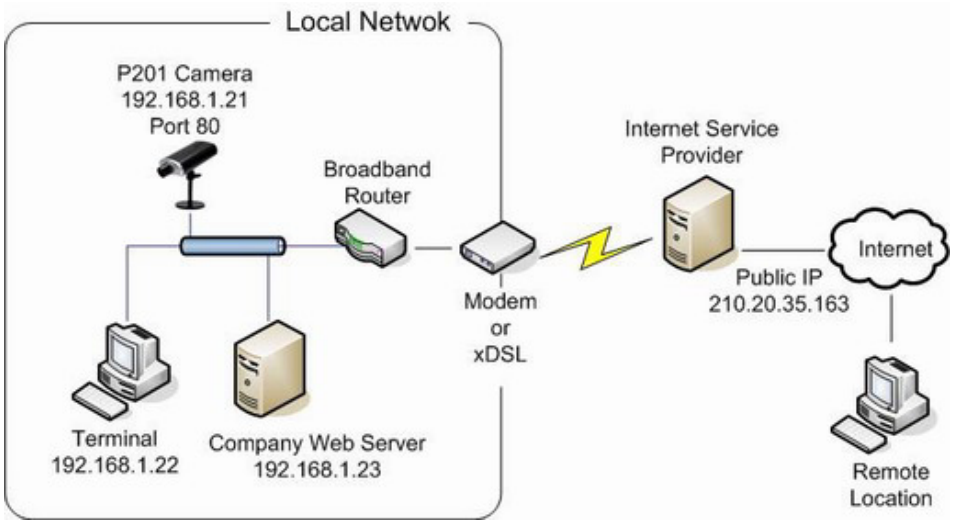
The following figures display the ways that the Camera can be connected.





9 Viewing your camera from a Remote Location

9.1 Using default Settings



In this case what we have here is:

Public IP Address 210.20.35.163, assigned by the Internet Service Provider (ISP)

PiXORD Camera, with a local IP of 192.168.1.21

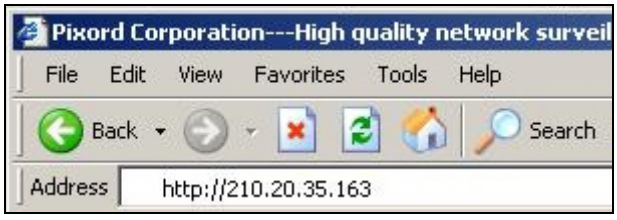
Broadband router

Since we are sharing only one single Internet connection through our Local Network, the Port Forwarding configuration in our Broadband Router for the camera will be as follows:

Private IP	Private Port	Type	Public Port
192.168.1.21	80	TCP UDP	80

Notice that the Port 80 is the default port for any Web-Server, but this also can be changed. Since Port 80 is the default, when we type our IP address at the Address bar, there won't be any need to type the port number.

Once the broadband router's configurations are set, we can open the Internet Explorer and type in the Address bar the Public IP address.



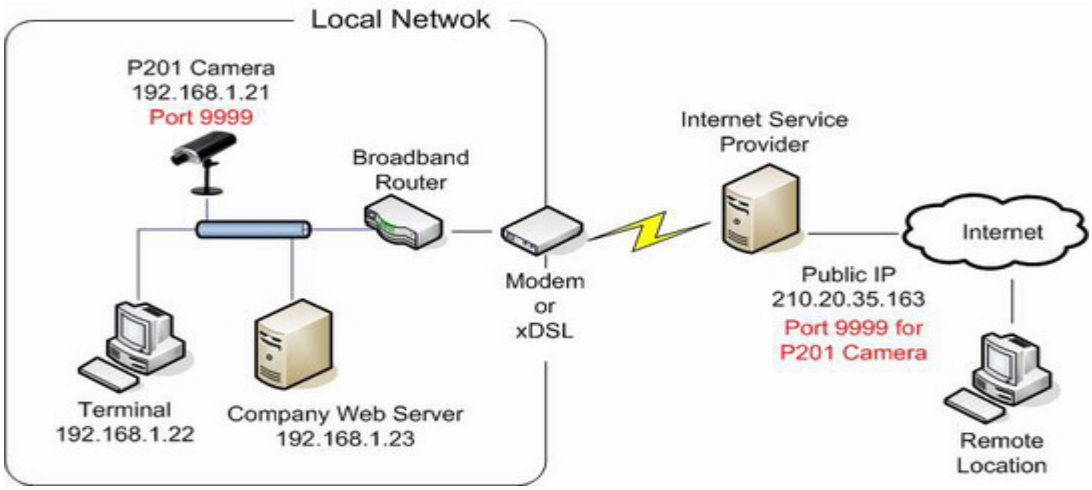
- **Question:**

  Can I use DHCP from my router to assign an IP to my camera?

- **Answer:**

  We don't suggest it, if you do this, every time you reboot your camera, a new IP will be assigned and you will have to configure again your router in your Port Forwarding configuration.

9.2 Assigning ports manually



In this case what we have here is:

Public IP Address 210.20.35.163, assigned by the Internet Service Provider (ISP), but we will be using Port 9999 for accessing the camera from the Internet.

PiXORD Camera, with a local IP of 192.168.1.21, using port 9999 to get access to the camera through the Local Network

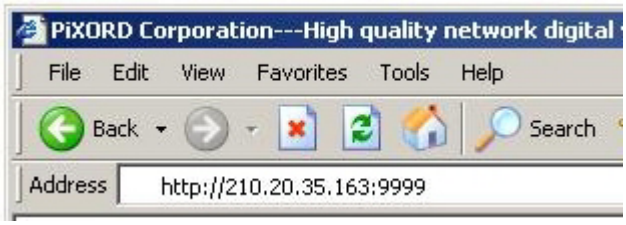
Broadband router

Since we are sharing only one single Internet connection through our Local Network, the Port Forwarding configuration in our Broadband Router for the camera will be as follows:

Private IP	Private Port	Type	Public Port
192.168.1.21	9999	TCP UDP	9999

In this case we are using Port 9999 for the PiXORD Camera at 192.168.1.21, and using Port 9999 for the Internet access at 210.20.35.163.

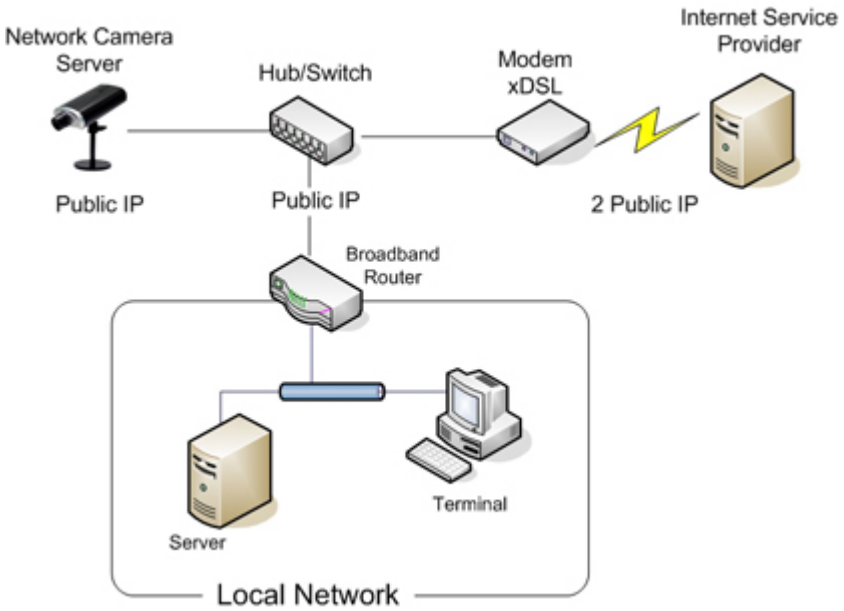
When we are in a remote location, in order to access our camera through Internet, we have to specify the Public Port when typing the Public IP Address as the figure below:



Note that if changes are made to the port assignation, some configurations at the PiXORD Camera also have to be changed, such as Network and DDNS settings

9.3 Using 2 or more Public Ips

The following figure is just an illustration on how the camera can be connected when 2 or more Public IPs are involved in a network infrastructure



➢ **How can I view my camera from a remote location through Internet when running the camera through my Local Network?**

This will require some configuration on your broadband router.
Before setting up the network configuration, let's get familiar with some terms

◆ **Broadband Router**

A broadband router allows users to share a single Internet connection.

◆ **TCP/IP**

TCP/IP is the protocol that computers use to communicate on the Internet.

◆ **TCP/IP Ports**

Each “service” you use on the Internet communicates using one or more specific port numbers; your e-mail program uses port number 25 to send e-mail, and port 110 to receive e-mail from your e-mail server.

◆ **IP Address**

Everything that is connected to a TCP/IP network needs a unique address, an IP address. This is what happens when you browse the Internet with requests to view Web pages.

◆ **Public IP Address**

A Public IP Address is the only IP address that is recognized on the Internet, where the term Internet refers to the global network, the World Wide Web.

◆ **Local IP Address**

A local IP address can only be used internally, on a local network. A computer with a local IP address cannot access the Internet itself. It can however, access the Internet via another computing device, e.g. a broadband router.

◆ **Port Forwarding**

Port forwarding, is essentially a method for a broadband router to forward data traffic aimed for one port on its public network interface to a computer or network camera on the local network. Ports run from 0 to 65535. Note that ports 0 to 1024 are well known ports, which means that those ports are already assigned to specific services. So when you consider choosing your own ports, select those starting from 1025 to 65535.

As an example, you are a user with a network camera who wants to access it from a remote location through the Internet. The following equipment is available:

1 PiXORD Network Camera
1 PC running Windows
1 Broadband Router

We need to direct all incoming requests that reach port 80 the public network interface of the broadband router, so that these are forwarded to the camera's IP address on the local network. Consult your broadband router's manual for information on how to configure port forwarding. Depending on the router, it could be denominated as Port Forwarding/NAT/Virtual Server. Usually it will look like this:

Private IP	Private Port	Type	Public Port
		○ TCP ○ UDP	

10 Trouble Shooting

Symptom

The PIXORD NC can not be accessed from a Web browser.

Possible Causes	Remedial Actions
The IP address is already used by another device.	Disconnect your PIXORD NC from the network. Run the PING utility and follow the appropriate recommendations. Note: The assigned IP number can be assumed valid if the PING utility returns "request timed out" - in which case you should set the IP address again, power on the PIXORD NC and then try accessing the unit again.
The IP address is located within a different subnet.	Run the PING utility, If the utility returns "no response" or similar, the diagnosis is probably correct. Then, you should proceed as follows: In Windows 95/98 or Windows NT, check that the IP address for your PIXORD NC is within the same subnet as your workstation: Click "Start", "Settings", "Control Panel" and "Network". Specify the TCP/IP adapter and click on Properties. Then, click "IP Address" in Properties. Check that the first 3 numbers within the IP address of your PIXORD NC matches the first 3 ones of your workstation. If not, your PIXORD NC may be on a different subnet and the IP address cannot be set from this workstation. You must set the IP address for the PIXORD NC from a workstation on the same subnet.

No video is displayed when many clients are connected	The maximum concurrent video connections is limited to 5. If more than 5 client connections are detected no video will be displayed for the later connections.
The audio stream is broken or unavailable.	The recommended concurrent audio connections is 1. When more than 1 client is connected the audio stream may be split between the various clients, therefore it will sound broken to each of the clients. This is due to the fact that the audio stream is sent over UDP, which also causes a problem for Internet connections. If either the client connecting to the camera or the camera itself is located behind a firewall all UDP ports must be opened to the host (client PC or camera) in order for the audio stream to work correctly. For this reason it is not recommended to use the audio stream over the Internet.
Live viewing is disrupted when accessing the SD card	Due to the limited processing power of the device it is unable to read from the SD card and stream live video simultaneously. This is most noticeable when the SD card is >=256MB. Therefore it is recommended that the SD card be removed from the device when you wish to access the images stored there in.
The IP address is unknown when using DHCP or PPPoE	Please set the E-mail settings on the E-mail Configuration page. When an IPaddress is assigned to a device using DHCP or PPPoE the device will automatically E-mail a message

	according to the settings on the E-mail configuration page.

11 Emergence Factory Default

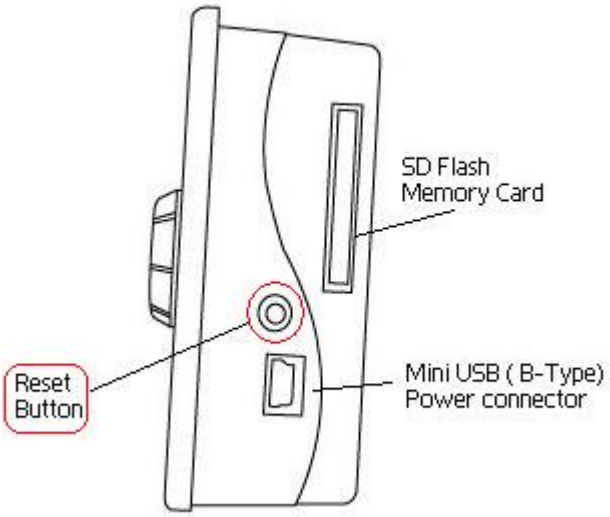
In certain circumstances, to restore the server to the initial factory default state may be necessary, normally through webpage (Miscellaneous Operation). If the user can't get into webpage (e.g. Missing of Username and Password information), then he can use the Emergency Factory Default to restore the factory default.

- **Procedures:**

  Press the Reset Button and hold if for 5 seconds at least.

  Release the button

  The device is back to factory default. All settings will be erased from the device, and the assigned IP will be back to 192.168.0.200 and Subnet to 255.255.255.0.



12 Specifications

Hardware	
System	CPU s86 16-bit RISC
	ROM 1MB Flash
	RAM 8MB SDRAM
	Watchdog
Connectors	LED x2 (Network, Power/System Status)
	RJ-45 connector for Ethernet 10/100 Base-T
	SD-Card slot
	Power 5V DC Adapter
	Mini USB (optional)
	Internal Microphone
Image Sensor	1/4" progressive scan CMOS sensor, 2.0 Lux
Video	
Lens	Fixed lens; Focal length 2.9mm F2.0
Image Compression	JPEG/MJPEG
Image Adjustment	Auto White balance: On/Off
	Auto Exposure: On/Off
	Auto Gain Control
	Quality adjustment (compression)
Resolution	640x480 (VGA), 320x240 (SIF), 160x112(QSIF)

Audio	ADPCM44kbps
Network	
Interface	Ethernet (10/100 Base-T)
Protocols	TCP/UDP/IP, ICMP, HTTP, FTP (client), SMTP (client), DHCP (client), DDNS (client), NTP (client), PPPoE
Performance	Max. throughput::3Mb/s
	Single connection: VGA, up to 15fps; SIF, up to 25/30
Operating Environment	
Operating Temperature	5° ~ 50°C (40° ~ 125°F)
Input Voltage	5V DC
Power Consumption	<3.5 watts
Mechanical Design	
Dimensions	84(L)*63(W)*31(H)mm
Net Weight	120 g
Accessories	CD with manual/software
	Ethernet cable
	Power Adapter
	Stand for desktop/wall/ceiling
	USB to Mini-USB cable

Management	
Special Features	Remote recording while viewing
	Display rotation
	Full screen display
	Multi-language support
	DDNS support (i.e. DynDNS)
	PPPoE support for direct connection to an ISP
	NTP support for setting the internal clock
Event Management	Trigger: Motion Detection
	Action: FTP, E-mail, Save to SD card
Installation	Network discovery and assignment with the IP Installer utility
Firmware Upgrade	Upgradeable through the Web UI
Client PC Requirements	Windows OS: 98se/Me/2000/XP
	Latest service packs
	Latest hardware drivers (i.e. audio/video)
	DirectX 9.0c or higher
	Internet Explorer 6.0 or higher
Security	Multi-tiered access control
Video Recording	Directly from the Web browser while viewing the live video
	Free 4-channel recording software
Product Limitations	
Max Concurrent Connections	Video: 5
	Audio: 1 (audio connections are not recommended over the Internet)

13 Glossary of Terms

- **ActiveX**

  A control (or set of rules) used by a browser. ActiveX controls are often downloaded and installed automatically as required

- **ADSL - (Asymmetric Digital Subscriber Line).**

  In an ADSL line, the upload speed is different from the download speed. Usually the download speed is much greater.

- **Applet**

  A small Java program that can be embedded in a HTML page. Applets differ from full-fledged Java applications in that they are not allowed to access certain resources on the local computer, such as files and serial devices (modems, printers, etc.), and are prohibited from communicating with most other computers across a network.

- **ARP - (Address Resolution Protocol).**

  Protocol for mapping an Internet Protocol address (IP address) to a physical machine address that is recognized in the local network.

- **Bandwidth**

  Width of a band of electromagnetic frequencies. Is used to mean (1) how fast data flows on a given transmission path, and (2), somewhat more technically, the width of the range of frequencies that an electronic signal occupies on a given transmission medium. Any digital or analog signal has a bandwidth.

- **Binary**

  Information consisting entirely of ones and zeros. Also, commonly used to refer to files that are not simply text files, e.g. images

- **Browser**

  A Client program (software) that is used to look at various kinds of Internet resources.

- **Byte**

  A set of Bits that represent a single character. Usually there are 8 Bits in a Byte, sometimes more, depending on how the measurement is being made

  CGI - (Common Gateway Interface). A set of rules that describe how a Web Server communicates with another piece of software on the same machine, and how the other piece of software talks to the web server.

- **CGI - (Common Gateway Interface).**

  A set of rules that describe how a Web Server communicates with another piece of software on the same machine, and how the other piece of software talks to the web server.

- **Domain Name**

  The unique name that identifies an Internet site. Domain Names always have 2 or more parts, separated by dots. The part on the left is the most specific, and the part on the right is the most general

- **DDNS - (dynamic domain name system).**

  A dynamic DNS (domain name system) service is a company that charges a small fee to allow a user connecting to the Internet with a dynamic IP address to be able to use applications that require a static IP address.

- **DNS - (domain name system).**

  The domain name system (DNS) is the way that Internet domain names are located and translated into Internet Protocol addresses. A domain name is a meaningful and easy-to-remember "handle" for an Internet address

- **DHCP - (Dynamic Host Configuration Protocol)**

  Is a communications protocol that lets network administrators manage centrally and automate the assignment of Internet Protocol (IP) addresses in an organization's network.

- **Email - (Electronic Mail).**

  Messages, usually text, sent from one person to another via computer. E-mail can also be sent automatically to a large number of addresses.

- **Ethernet**

  Is the most widely-installed local area network (LAN) technology. An Ethernet LAN typically uses coaxial cable or special grades of twisted pair wires. Ethernet is also used in wireless LANs. The most commonly installed Ethernet systems are called 10BASE-T and provide transmission speeds up to 10 Mbps.

- **Extranet**

  An intranet that is accessible to computers that are not physically part of a company's' own private network, but that is not accessible to the general public, for example to allow vendors and business partners to access a company web site.

- **Firewall**

  A set of related programs, located at a network gateway server, which protects the resources of a private network from users from other networks.

- **FTP - (File Transfer Protocol)**

  FTP is a way to login to another Internet site for the purposes of retrieving and/or sending files

- **Firmware**

  A program that is inserted into programmable read-only memory (programmable ROM), thus becoming a permanent part of a computing device. Firmware is created and tested like software (using microcode simulation).

- **Gateway**

  A network point that acts as an entrance to another network.

- **HTML - (Hyper Text Markup Language).**

  The coding language used to create Hypertext documents for use on the

- **HTTP -- (Hyper Text Transfer Protocol).**

  The protocol for moving hypertext files across the Internet. Requires a HTTP client program on one end, and an HTTP server program on the other end. HTTP is the most important protocol used in the World Wide Web (WWW).

- **ICMP--(Internet Control Message Protocol).**

  A message control and error-reporting protocol between a host server and a gateway to the Internet. ICMP uses Internet Protocol (IP) datagrams, but the messages are processed by the IP software and are not directly apparent to the application user.

- **Intranet**

  A private network inside a company or organization that uses the same kinds of software that you would find on the public Internet, but that is only for internal use. Compare with extranet.

- **IP Number - (Internet Protocol Number).**

  A unique number consisting of 4 parts separated by dots, e.g.165.113.245.2

  Every machine that is on the Internet has a unique IP number - if a machine does not have an IP number, it is not really on the Internet

- **ISP - (Internet Service Provider).**

  A company that provides individuals and other companies access to the Internet and other related services such as Web site building and virtual hosting.

- **Java**

  A network-friendly programming language invented by Sun Microsystems, often used to build large, complex systems that involve several different computers interacting across networks, for example transaction processing systems

- **JPEG - (Joint Photographic Experts Group).**

  Commonly mentioned as a format for image files. JPEG format is preferred to the GIF format for photographic images as opposed to line art or simple logo art.

- **LAN - (Local Area Network).**

  A group of computers and associated devices that share a common communications line and typically share the resources of a single processor or server within a small geographic area (for example, within an office building). Usually, the server has applications and data storage that are shared in common by multiple computer users

- **MJPEG**

  Motion JPEG (M-JPEG) is a video codec where each video field is separately compressed into a JPEG image. The resulting quality is independent from the motion in the image which differs from MPEG video where quality often decreases when footage contains lots of movement.

- **Modem - (MOdulator, DEModulator).**

  A device that connects a computer to a phone line. A telephone for a computer. A modem allows a computer to talk to other computers through the phone system. Basically, modems do for computers what a telephone does for humans.

- **NTSC -(National Television Standards Committee).**

  The NTSC (National Television Standards Committee) was responsible for developing, in 1953, a set of standard protocol for television (TV) broadcast transmission and reception in the United States.

- **PAL - (Phase Alternation Line)**

  Analog television display standard that is used in Europe and certain other parts of the world.

- **Ping**

  To check if a server is running. From the sound that a sonar systems makes in movies, you know, when they are searching for a submarine

- **PPP- (Point-to-Point Protocol).**

  A protocol for communication between two computers using a serial interface, typically a personal computer connected by phone line to a server.

- **Router**

  A special-purpose computer (or software package) that handles the connection between 2 or more Packet-Switched networks. Routers spend all their time looking at the source and destination addresses of the packets passing through them and deciding which route to send them on.

- **SMTP - (Simple Mail Transfer Protocol)**

  The main protocol used to send electronic mail from server to server on the Internet

- **SNMP - (Simple Network Management Protocol).**

  A set of standards for communication with devices connected to a TCP/IP network. Examples of these devices include routers, hubs, and switches

- **Subnet**

  A subnet (short for "subnetwork") is an identifiably separate part of an organization's network. Typically, a subnet may represent all the machines at one geographic location, in one building, or on the same local area network (LAN).

- **Subnet mask**

  An IP Address consists of two components: the network address and the host address. “Subnetting” enables a network administrator to further divide the host part into two or more subnets. The subnet mask identifies the subnet to which an IP address belongs.

- **TCP/IP - (Transmission Control Protocol/Internet Protocol)**

  This is the suiteof protocols that defines the Internet. Originally designed for the UNIX operating system, TCP/IP software is now included with every major kind of computer operating system. To be truly on the Internet, your computer must have TCP/IP software.

- **Telnet**

  The command and program used to login from one Internet site to another. The telnet command/program gets you to the login: prompt of another host.

- **UDP - (User Datagram Protocol).**

  One of the protocols for data transfer that is part of the TCP/IP suite of protocols. UDP is a "stateless" protocol in that UDP makes no provision for acknowledgement of packets received.

- **URL - (Uniform Resource Locator)**

  The term URL is basically synonymous with URI. URI has replaced URL in technical specifications.